

ENGINEERING AND
SCIENTIFIC APPLICATIONS
SOFTWARE USED AT

INPUT



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1985 report

ENGINEERING AND
SCIENTIFIC APPLICATIONS
SOFTWARE USED AT
LARGE NUMBERS
OF DEC INSTALLATIONS

A PRELIMINARY STUDY CONDUCTED
FOR IBM

YIB2

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AUTHOR

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TITLE ENGINEERING AND SCIENTIFIC
APPLICATIONS SOFTWARE USED AT LARGE NUMBERS
OF DEC

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I INTRODUCTION

A. OBJECTIVE

- THE PURPOSE OF THIS STUDY IS TO IDENTIFY, PRELIMINARILY THE ENGINEERING AND SCIENTIFIC APPLICATION SOFTWARE PACKAGES USED AT LARGE NUMBERS OF OF DEC SITES. SPECIFICALLY, IBM WISHED TO KNOW WHICH TEN SYSTEMS ARE MOST FREQUENTLY INSTALLED.
- THE SOFTWARE PACKAGES THAT NOT COVERED IN THIS PRELIMINARY STUDY INCLUDE:
 - SYSTEMS SOFTWARE
 - GENERAL PURPOSE GRAPHICS SOFTWARE USED IN BUSINESS AND SCIENTIFIC INSTALLATIONS SUCH AS PACKAGES OFFERED BY SAS.
 - THE STATISTICAL SOFTWARE PACKAGES USED IN SOCIAL SCIENCE AND BUSINESS APPLICATIONS SUCH AS SPSS.



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B. METHODOLOGY

- MULTIPLE INDUSTRY PUBLICATIONS INCLUDING ICP DIRECTORIES AND VENDOR LITERATURE WERE USED TO OBTAIN THE NAMES OF PRODUCTS THAT APPEARED TO BE WIDELY USED.
- CONTACTS WERE MADE WITH DEC AND DATA GENERAL TO OBTAIN INFORMATION ON ENGINEERING AND SCIENTIFIC APPLICATION PRODUCTS THAT THEY FELT WERE WIDELY USED ON DEC EQUIPMENT AND WHICH THEY WERE WILLING TO DISCUSS WITH A COMPANY THAT COLLECTED AND PUBLISHED RESEARCH DATA.
- INTERVIEWS WERE HELD WITH SOFTWARE VENDORS WHOSE PRODUCTS WERE MENTIONED BY THE PREVIOUS SOURCES. THESE VENDORS WERE ASKED ABOUT THEIR OWN PRODUCTS AND ABOUT COMPETITIVE PRODUCTS. A LIST OF VENDORS CONTACTED IS SHOWN IN EXHIBIT I-1.

EXHIBIT I-1

LIST OF VENDORS CONTACTED (INCLUDING SOFTWARE HOUSES/ TURNKEY VENDORS)

APPLICON	AUTOTROL
BATELLE	BECKMAN INSTRUMENTS
BMDP STATISTICAL	BOLT, BERANEK AND NEWMAN
CACI	CAP
CDC	COMTEX
CLM SYSTEMS	CONCAP
CONSTRUCTION SYSTEMS	DATA GENERAL
DEC	GE CAE (SDRC)
GE CALMA	GEORGIA TECH.
IMSL	INTEGRAPH
MACNEAL SCHWENDLER	MCAUTO (MANUF. IND. SYS. CO.)
NAG	NASA'S COMPUTER SOFTWARE CENTER
PAFEC	PRIME
PRIKSKER & ASSOCIATES	SIMULATION SCIENCES
STRUCTURAL RESEARCH	TECH. INFO. SYST.
SWANSON	

C. DATA GATHERING CONSIDERATIONS

- SOME SOFTWARE VENDORS HAVE MADE MULTIPLE SITE ARRANGEMENTS AND HAVE NOT KEPT TRACK OF ACTUAL PHYSICAL INSTALLATIONS.
- INFORMATION SUPPLIED BY SOFTWARE VENDORS TO VARIOUS PUBLICATIONS IS NOT ALWAYS ACCURATE.
- MULTIPLE CONTACTS WITHIN SINGLE FIRMS SOMETIMES DIFFERED ON ESTIMATES OF THE NUMBER OF INSTALLATIONS.
- SOME SOFTWARE PACKAGES HAVE BEEN CHANGED OVER TIME ALTHOUGH THE NAMES HAVE REMAINED CONSTANT. THIS STUDY ESTIMATES ON A PACKAGE NAME BASIS.
- SOME "PACKAGES" ARE REALLY A SET OF SOFTWARE MODULES THAT MAY HAVE A SMALL PERCENTAGE OF CODING COMMON BUT ARE SOLD UNDER THE SAME NAME.
- THERE ARE GENERIC PACKAGES (NASTRAN, SPICE) WHICH HAVE VERY HIGH FUNCTIONAL IDENTITY. THESE ARE PRESENTED AS GENERIC, NOT BY SUPPLIER.

THE TOP TURNKEY PACKAGES

<u>VENDOR</u>	<u>PACKAGE</u>	<u>COMMENTS</u>
INTEGRAPH	INTERACTIVE GRAPHIC DESIGN	MARKET ANSYS AND NASTRAN INDIRECTLY
APPLICON	BRAVO	INTRODUCING 3D CAD
GE CALMA	DDM/DIMENSION 3	AEC AND MECHANICAL (ELECTRICAL NOW DG)
MCAUTO	UNIGRAPHICS	CHANGING MARKETING STRATEGY

- THESE ARE THE DEC MARKET DRIVERS.
- PRINCIPAL FOCUS OF THIS GROUP IS CAD.
- OTHER SIGNIFICANT VENDORS (CVN, AUTOTROL, IBM) ARE NOT DEC-BASED.

THE TOP PACKAGES

<u>VENDOR</u>	<u>PACKAGE</u>	<u>COMMENTS</u>
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APPLICON SYSTEMS	BRAVO	INTRODUCING 3D CAD
GE CALMA	DDM/DIMENSION 3	AEC AND MECHANICAL (ELECTRICAL NOW DG)
MCAUTO	UNIGRAPHICS	CHANGING MARKETING STRATEGY
IMSL	IMSL	SUBROUTINE LIBRARY; CHANGING MARKETING STRATEGY
NAG	NAG FORTRAN LIBRARY	MORE CONCERN ABOUT COMPETITION
BMDP	BMDP STATISTICAL	OLD BIOMEDICAL SYSTEM SOFTWARE

- THE NEXT GROUP CONSISTS OF SUB-ROUTINE LIBRARIES.
- S.R. SUPPLIERS FEELING PRESSURE FROM THE DOMINANTS.
- TOP 7, NOT RANK ORDER.

THE TOP PACKAGES

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NAG	NAG FORTRAN LIBRARY	MORE CONCERN ABOUT COMPETITION
BMDP	BMDP STATISTICAL	OLD BIOMEDICAL SYSTEM SOFTWARE
GT	STRUDL	DISTINCT NEW MARKETING STRATEGY
SWANSON ANALYTICAL SYSTEMS	ANSYS	HAS BEEN SOLD DIRECTLY
MULTIPLE	VARIETIES OF SPICE	
MSC AND OTHERS	NASTRAN	

- THIRD MAJOR GROUPS IS "APPLICATIONS" AS CONTRASTED TO "SYSTEMS" AND "SUB ROUTINES."
- IN EFFECT THERE IS A THREE-WAY PARTITIONING OF THE SCIENTIFIC/ENGINEERING PACKAGE MARKET.

B. ADDITIONAL FINDINGS

- BASED ON DISCUSSIONS WITH VENDORS THE FOLLOWING ROLES CAN BE DISTINGUISHED AMONG SOFTWARE TURNKEY VENDORS:
 - DETERMINATION EQUIPMENT SELECTION
 - INFLUENCE ON SELECTION OF OTHER PACKAGES
 - PACKAGES CAN BE SOLD INDIRECTLY TO USERS THROUGH SOFTWARE VENDORS OTHER THAN THE SITE-DOMINANT VENDOR
 - PASSIVE VENDORS DEPEND ON REPUTATION FOR DIRECT SALES
 - PACKAGE VENDORS IN GENERAL DEPEND ON HARDWARE VENDORS FOR LEADS OR SALES.
- THE MARKET AND VENDOR ROLES ARE CHANGING
 - SYSTEM HOUSES/TURNKEYS ARE INCREASING CONTROL BY LIMITING THE SOFTWARE FROM OTHER VENDORS THAT THEY WILL INTERFACE SINCE THEY ARE MORE CONCERNED WITH INTEGRATION AND BACKEND DATABASE CAPABILITIES.
 - SOFTWARE VENDORS ARE LESS LIKELY TO REST ON THEIR REPUTATIONS RESULTING IN MORE ACTIVE MARKETING. STEPS ARE UNDERWAY TO WORK MORE WITH SYSTEM HOUSES AS WELL AS TO PRODUCE VERSIONS FOR MAINFRAMES OR ADDITIONAL MINIS.
 - VENDORS ALSO ARE AWARE THAT THE USE OF GRAPHICS AND COMPUTER ASSISTED INTERFACES CAN DRIVE THE SELECTION OF SOFTWARE.

- INFORMATION WAS ALSO OBTAINED DIRECTLY FROM HARDWARE VENDORS.
 - CLOSE ATTENTION TO SOFTWARE VENDORS AND SYSTEM HOUSES BY DATA GENERAL HAS LED SOME SOFTWARE VENDORS TO PREPARE VERSIONS THAT WILL RUN ON DG HARDWARE IN ADDITION TO OR INSTEAD OF DEC EQUIPMENT.
 - APOLLO HAS ALSO WORKED WITH SOFTWARE VENDORS BUT APPEARS TO HAVE BENEFITTED FROM THE APPEAL OF ITS WORKSTATION APPROACH AS MUCH AS OR MORE THAN FROM ITS CONTACTS.
 - DEC HAS BEEN ACTIVE IN BRINGING THE MICROVAX TO THE ATTENTION OF SOFTWARE VENDORS AS WELL AS USERS.
- IN LIGHT OF CHANGING MARKET NEEDS AND EMPHASIS ON SOFTWARE, HARDWARE VENDORS (IN GENERAL) WILL NEED TO IMPROVE THEIR UNDERSTANDING OF SOFTWARE REQUIREMENTS NOT ONLY IN SCI/ENG BUT IN OTHER APPLICATIONS SUCH AS SIMULATION, W/P AND SPREADSHEETS.

